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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,060	10/28/2003	Seungkoo Kang	5003073-033US1	5976
29737	7590	07/27/2006		
SMITH MOORE LLP P.O. BOX 21927 GREENSBORO, NC 27420			EXAMINER ASINOVSKY, OLGA	
			ART UNIT	PAPER NUMBER

1711

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/695,060

**Applicant(s)**

KANG ET AL.

**Examiner**

Olga Asinovsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/10/2006 has been entered.

The amendment filed on 04/13/2006 after final has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pesce et al U.S. Patent 6,844,430.

Reference has been considered in the previous office actions mailed on 09/02/2005 and 02/10/2006 under 102(e) and 103(a) rejections.

The present invention is a superabsorbent polymer comprising: (a) a polyacrylic acid polymer being crosslinked and (b) a water swellable, water-insoluble aminopolysaccharide polymer. The component (a) and (b) is a mixture, see present claim 8.

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Pesce discloses a breathable absorbent article comprising absorbent gelling material having functional groups such as carboxyl group, column 12, lines 40-41, 49 and 62; and cationic polysaccharides including aminopolysaccharides, claim 1 at column 22.

The absorbent gelling material such as polyacrylic acid, column 13, line 4, is readable in the present claims. This absorbent material can be slightly cross-linked, partially neutralized, column 13, lines 7-13 and 25-49. Slightly cross-linked polyacrylic acid is readable in the present claims for being (a) polymeric resin. The cross-linking agent for the absorbent gelling material is present in the amount of 0.001 to 5 mole%, column 13, lines 45-46. The amount of the crosslinking agent is readable in the present claim 1(a) (ii). The preneutralization degree could be 0 for (a) (iii) in claim 1. The aminopolysaccharide is chitosan material that can be water-soluble and water insoluble chitosan, column 5, lines 8-14 and column 6, lines 50-51. The solubility of chitosan is depending on the degree of cross-linking, column 6, lines 64-67. The water-insoluble aminopolysaccharide is readable for being (b) water-insoluble aminopolysaccharide polymer having a molecular weight from 1,000 to 10000000, column 7, lines 8-15. Also aminopolysaccharide materials can be cross-linked and modified chitosans, column 7, lines 8-10 and column 9, lines 4-38. The cationic polysaccharides and pH buffering means and absorbent gelling material can be formed in powdered form or granules, column 17, lines 22-25.

The amount of absorbent gelling material particles can be present in range from 5 g/m<sup>2</sup> to 250 g/m<sup>2</sup>, claim 1 at column 22. The claimed statement "when the superabsorbent polymer is contacted with an aqueous solution, the polymeric resin is neutralized by

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aminopolysaccharide polymer so that the superabsorbent polymer has a degree of neutralization of about 20 mole% or more than the preneutralization degree of the polymeric resin composition" is inherent to the aminopolysaccharide and absorbent gelling material such as a cross-linked polyacrylic acid resin. The modified cellulose fibers and synthetic fibers can be employed, column 18, lines 23-30, for the present claim 29. The component (a) and (b) in the present claims are mixing.

Pesce discloses an article comprising a topsheet, a backsheet, and an absorbent core.

The chemical formulation of the absorbent core is equivalent to the chemical formulation of the claimed absorbent composite in the present claims. The term "article" is intended use of the same absorbent composition.

Pesce does not disclose the specified characteristics for the absorbent material in the present claims 2-6, 8, 11, 13-19, 22-27 and 30-31 such as gel bed permeability, liquid capacity, absorbency under load (AUL).

It would have been obvious to one of ordinary skill in the art to consider that specified characteristics such as gel bed permeability, liquid capacity, absorbency under load (AUL) in the present claims could be obtained in Pesce invention since these characteristics are depending on the cross-linking degree, neutralizing value and the presence of other absorbent natural fibers or modified synthetic fibers, and all of these statements are readable in Pesce invention.

***Response to Arguments***

4. Applicant's arguments filed 4/13/2006 and 5/10/2006 have been fully considered but they are not persuasive. Argument is that Pesce discloses a disposable absorbent article, whereas the present invention is a superabsorbent polymer. Pesce discloses an article having the same chemical formulation of the absorbent core intermediate that is in the present claims. The term article is considered as intended use of the same absorbent composition. Applicants argue that the "present invention is not directed to mixing the components, but to a superabsorbent polymer that is the reaction product of a polymeric resin that is preneutralized to up to 50 mol% and an aminopolysaccharide polymer," page 2/3 of the Remarks of 5/10/2006. This argument is not persuasive, see present claim 8, line 1 and the present claim 30, line 14 for (c). First, the "superabsorbent" properties are inherent to the composition made from the same ingredients. The present claim 8 discloses "a mixture" of aminopolysaccharide (b) and the polymeric resin (a); the present claim 30 claims "mixing." The term "reacting" is referring to the polymeric resin composition (a) that is prepared by reacting of polyacrylic acid and crosslinking agent. Pesce discloses a crosslinking agent such as a polyol for polyacrylic acid or amines, col. 13, lines 42-43. The reaction is readable in Pesce invention. Since the absorbent article in Pesce invention is used for absorbing bodily fluid=aqueous solution, the polyacrylic acid cross-linking resin is inherently neutralized by aminopolysaccharide polymeric resin.


In light of the new rejection of all claims under 103 rejection, this action is not final.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
James J. Seidleck  
Supervisory Patent Examiner  
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